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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,483	11/19/2003	Tomohiro Yamamura	61355-049	9179

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McDERMOTT, WILL & EMERY  
600 13th Street, N.W.  
Washington, DC 20005-3096

EXAMINER

BROADHEAD, BRIAN J

ART UNIT PAPER NUMBER

3661

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Interview Summary</b>	Application No. 10/715,483	Applicant(s) YAMAMURA ET AL.	
	Examiner Brian J. Broadhead	Art Unit 3661	

All participants (applicant, applicant's representative, PTO personnel):

(1) Brian J. Broadhead. (3)\_\_\_\_\_.

(2) Wei-Chen Nicholas Chen. (4)\_\_\_\_\_.

Date of Interview: 16 May 2006.

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.  
If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: 1.

Identification of prior art discussed: Mattes et al., 2004/0153217.


Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

  
 Examiner's signature, if required

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant's representative presented arguments of how the current claim 1 distinguishes over the cited prior art. Applicant's representative specifically pointed out the "driver's intentions" of the claim. The examiner stated that drivers intentions could be considered inherent in Mattes et al. since the collision monitor of the prior art relies on measures of the vehicle state that would be directly affected by the driver's use of the brakes or accelerator. It was suggested that more specifically claiming what was meant by "driver's intentions" and how this was used in the calculation of risk potential would help. Applicant's representative also proposed removing "at least one" and the proximity measurement from the future state prediction device. This would leave the future state prediction device reliant only on an extent of influence on the subject vehicle due to future changes. The examiner stated that this would appear to overcome the prior art rejection, but would need to further review the specification to determine the exact scope to give this limitation.

# McDermott Will & Emery

# DRAFT

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**Number of Pages, Including Cover:****Re:**

**IMPORTANT COMMUNICATION FOR  
THE U.S. PATENT AND TRADEMARK OFFICE  
TO EXAMINER BRIAN J. BROADHEAD – Art Unit 3661**

**INVENTOR(S):**

Tomohiro YAMAMURA, et al.

**APPLICATION NO.:**

10/715,483

**FILED:**

November 19, 2003

**GROUP ART UNIT:**

2636

**EXAMINER:**

Brian J. BROADHEAD

**ATTORNEY DOCKET NO.:**

61355-049

**TITLE:**

DRIVING ASSIST SYSTEM FOR VEHICLE

Attached please find the Interview Agenda for the above-identified application.

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Docket No.: 61355-049

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of	:	Customer Number: 20277
Tomohiro YAMAMURA, et al.	:	Confirmation Number: 9179
Serial No.: 10/715,483	:	Group Art Unit: 3661
Filed: November 19, 2003	:	Examiner: B. J. Broadhead
For: DRIVING ASSIST SYSTEM FOR VEHICLE	:	

**INTERVIEW AGENDA**

Dear Sir:

Thank you for granting a telephone interview to discuss the above-identified patent application on May 16, 2006, at 2:00 pm eastern time. Per your request, an agenda for the interview is provided below.

- Discussion of features of claim 1.
- Discussion of differences between claim 1 and Mattes

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**DISCUSSION**

Claim 1, reads as follows:

A driving assist system for a vehicle, comprising:

...  
future state prediction device that predicts future driving conditions, the predicting including calculating at least one of a current degree of proximity to a preceding vehicle and an extent of influence on the subject vehicle due to future changes in surrounding environment...and

a risk potential calculating device that calculates risk potential around the subject vehicle based on the future driving conditions predicted by the future state prediction device and a driver's intentions.

Therefore, the prediction of future driving conditions includes calculating at least one of (1) a current degree of proximity to a preceding vehicle, and (2) an extent of influence on the subject vehicle due to future changes in surrounding environment. Risk potential around the subject vehicle is calculated based on (1) the future driving conditions predicted by the future state prediction device, and (2) a driver's intentions.

According to the specification, an example of a current degree of proximity to a preceding vehicle is time to contact (TTC); and an example of the predicted extent of influence is time headway (THW). TTC indicates how many seconds later an inter-vehicle distance  $d$  will become zero and the subject vehicle and the preceding vehicle come into contact with each other.

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TTC can be obtained from equation  $TTC: \tau_c = -d/v_r$  (expression 1).

On the other hand, THW represents **the extent of influence on the subject vehicle due to future changes in surrounding environment** when it is assumed that the relative velocity  $v_r$  will change. THW can be calculated using a special equation  $THW: \tau_h = d/v_1$  (expression 2). THW is obtained by dividing the vehicle distance  $d$  by the subject vehicle speed  $v_1$ , and

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represents a period of time until the subject vehicle reaches the current position of the preceding vehicle.

In rejecting claim 1, the Office mainly relied on paragraph 32 of Mattes. It is noted that paragraph 32 of Mattes includes a general discussion on what types of data can be used to calculate a collision probability. The identified data includes (a) the distance between one's own vehicle and this object, (b) the relative speed between the object and one's own vehicle, (c) the azimuth angle of the object in relation to the straight-ahead direction of one's own vehicle, and/or (c) the lateral offset of the object calculated therefrom in relation to the vehicle and the vehicle speed and the steering angle. Though many types of data are generally listed without detailed discussion, Applicants note that Mattes fails to disclose the following claimed features:

1. Mattes never mentions about the concept of **the extent of influence on the subject vehicle due to future changes in surrounding environment**, and how this parameter should be calculated; and
2. Mattes also fails to discuss predicting a future driving condition using **the extent of influence on the subject vehicle due to future changes in surrounding environment**.

Furthermore, claim 1 specifically describes that risk potential around the vehicle is calculated using two values: (1) the future driving conditions predicted by the future state prediction device, and (2) a driver's intentions. According to an example illustrated in the specification, an acceleration of the vehicle can be used as an indication of a driver's intention. The calculated risk potential is obtained using the following equation:

$$RP_1 = \frac{1}{\tau_h} \left( \alpha_1 + \frac{\beta_1}{\tau_1} + \frac{\beta_1}{\tau_c} \right) \quad \dots(\text{expression 5})$$



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wherein the risk potential RP1 is calculated using  $THW=\tau h$ ,  $TTC=\tau c$ , and  $1/\tau 1$  corresponding to the subject vehicle acceleration  $a 1$ . See page 14, last paragraph through page 15, second paragraph of the specification.

In contrast, paragraph 32 of Mattes does not mention anything a driver's intention is among the types of data that Mattes' system uses to calculate a collision probability. Contrary to the contention made in the office action, paragraph 32 of Mattes NEVER describes calculating a collision probability using acceleration or deceleration. Although Mattes describes detecting an acceleration of a vehicle in other parts of the documents, the detection is used for purposes other than CALCULATING a collision probability.

Moreover, Mattes fails to discuss that a collision probability should be calculated using BOTH (1) the future driving conditions predicted by the future state prediction device, and (2) a driver's intentions, as described in claim 1. There are no specifics in Mattes discussing how the collision probability should be calculated.

Respectfully submitted,

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